

Student Performance Assessment and the Relationship of Collaborative Problem Solving Dimensions as an Innovation in Mathematics Learning

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Abstract

This research aims to develop innovations in student performance assessment and analyze the relationships between the dimensions of Collaborative Problem Solving (CPS) as an effort to support the transformation of mathematics learning toward a sustainable future. The research subjects were 18 students from Mater Dei High School. The instrument in this study uses a self-assessment questionnaire with 32 items based on the four dimensions of CPS, namely cognitive, social, emotional, and metacognitive, using a Likert scale. Data analysis was conducted using Aiken's V index for content validity testing and Cronbach's Alpha for reliability testing, while multiple linear regression analysis was used to examine the relationships between dimensions. The research results indicate that the instrument has good content validity and high reliability ($\alpha > 0.90$). Regression analysis yielded an R^2 value of 0.973, meaning that 97.3% of students' metacognitive skills can be explained by the cognitive, social, and emotional dimensions simultaneously. The emotional dimension makes the largest positive contribution to the metacognitive dimension. Thus, the Collaborative Problem Solving (CPS)-based student performance assessment can be declared suitable for use and capable of providing a comprehensive overview of students' collaborative skills.

Keywords: performance assessment, collaborative problem solving, validity, reliability, linear regression